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A Research Note on the Use of Bibliometrics to Review the Corporate Social Responsibility and Corporate Social Performance Literature

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Recently, the authors presented a bibliometric analysis of research and theory on corporate social responsibility and corporate social performance, which included a list of frequently cited articles in these fields. This list caused some questions, and therefore this research note aims to supplement and discuss the findings presented in the original study to (a) explain the composition of the dataset used, (b) highlight some problems pertaining to bibliometric research, and (c) underline why such studies nevertheless are useful, also in business and society research.

Keywords: *corporate social responsibility; corporate social performance; bibliometry; citation studies*

In the September 2005 issue of this journal, we presented a bibliometric analysis of research and theory on two central issues in business and society research: corporate social responsibility (CSR) and corporate social performance (CSP; de Bakker, Groenewegen, & den Hond, 2005). Our aim was to find out which of three conceptualizations—which we labeled *progression*, *variegation*, and *normatism*—better describes the evolution of the literature in the CSR/CSP field during a period of 30 years. Although not our primary goal, the data we collected allowed us to compile a list of frequently cited articles in our dataset (Table 4 in de Bakker et al., 2005, p. 303). It later became apparent that some well-known and often-cited articles on CSR and performance were not included in this table.

Authors' Note: We wish to thank Archie B. Carroll and the editor of *Business and Society* for having provided the opportunity to address the issues in this research note.

In this research note, we first of all wish to explain why some publications on CSR/CSP did not show up in that Table 4, using Archie B. Carroll's (1979) landmark article as an example. Why are there missing diamonds? Second, we use this example to highlight some of the problems associated with bibliometric research. Finally, we discuss Table 1 of this note in which we brought together citation data on CSR/CSP articles from different sources, going beyond the sources used in our initial search. Table 1 shows the diversity in reported citations across data sources and, when contrasted to the original Table 4, also over time. This research note therefore underlines the snap-shot character of such tables and briefly discusses their applicability.

Missing Diamonds

In our article, we conscientiously explained all of the steps we followed in collecting and analyzing our data. The choice of databases and the selection of publications therein are especially critical for the issue we wish to address in the current note. Collecting data from electronically accessible authoritative databases enhances the ease of compilation and subsequent analysis of data. As CSR/CSP is a fairly broad notion, charting developments in this field requires the use of databases that cover a broad range of journals. The access to a broad selection of articles that both Web of Science/Social Science Citation Index (WoS/SSCI) and ABI/Inform offer is an asset that we made use of. These two databases have been used frequently in the identification of relevant research in the social sciences, including management, as well as in the evaluation of research (e.g., Ingwersen, 2000; Moed, 2002). However, we concentrated on finding articles and were less concerned with charting the broad social structure of the CSR/CSP field.

At various instances in the original article, we clearly stated that information and articles were collected at one particular moment in time in the two specified databases and explained the procedures according to which we selected and checked the content of our dataset. Obtaining a broad coverage of the literature was the reason why we searched two databases; we checked with a few earlier literature reviews for completeness of the resulting dataset. We are quite convinced that our dataset is comprehensive. Because we searched within article titles, abstracts, and keywords, it is more likely that we did include a few articles in the dataset we might not have selected had we attempted to conduct a traditional literature review rather than miss articles that definitively should have been included.

The resulting dataset contains a few articles that might seem to be unconnected to the CSR/CSP field at first sight—for instance, because they are stakeholder articles. For some of these articles, our search words appear in the abstract (e.g., Agle, Mitchell & Sonnenfeld, 1999; Brown & Dacin, 1997). Apparently, the authors see their article as being connected to the CSR/CSP field. In other instances, our search words match keywords that were added to these articles' records by the database we searched (called *Keywords Plus* in WoS/SSCI), even if authors themselves had not provided such keywords (author keywords in WoS/SSCI). As is explained in WoS/SSCI,

> *KeyWords Plus* are words or phrases that frequently appear in the titles of an article's references, but do not appear in the title of the article itself. *KeyWords Plus* may be present for articles that have no author keywords, and may include important terms not listed among the author keywords (Thomson, 2005).

For example, articles from the Academy of Management journals do not contain author keywords, but in WoS/SSCI, *KeyWords Plus* are added. The distinction between the two sources of keywords is lost, however, once the records are exported into reference management software. Apparently, in a number of stakeholder articles, there is a high incidence of references to the CSR/CSP literature, and for that reason, they are assigned CSR/CSP keywords by WoS/SSCI. As these articles are also often cited, they appeared in Table 4. In Table 1, we identify the articles that entered our dataset through *KeyWords Plus*. We decided to retain them in Table 1 because these articles are part of the dataset on which we performed our analyses.

Why, then, was it that Carroll (1979) and a few other diamonds did not show up in the list of frequently cited articles? With regard to the information specifically collected for Table 4, we relied on WoS/SSCI's general search facility for citation data. ABI/Inform does not provide citation data. Some initial checking in the WoS/SSCI database in preparing this research note in September 2005 shows that the *Academy of Management Review* has only been included in the WoS/SSCI database since Volume 8 (1983). Earlier articles from this journal, therefore, do not show up in keyword, title, and abstract searches. As we stated, "not all journals have been included in these databases all this time, and both databases continue to expand their back catalogues" (de Bakker et al., 2005, p. 290-291). We also noted,

> Figure 2 shows the number of papers in our three datasets. It is evident that, on average, the number of papers remains fairly constant until about 1990. After that year, a steady increase in the number of publications can be observed. This

> could either reflect increased interest in the topic, i.e. real change, or it could also be an effect of our data selection if WoS/SSCI and ABI/Inform are more comprehensive for the 1990s than before. (p. 297)

Regarding Carroll (1979) and Table 4, the issue is therefore not that this article was missing in our dataset—it was included through ABI/Inform—but rather that information on the number of citations to this article was lacking. Other potentially relevant articles, for instance from *Business and Society*, suffered a similar fate.

In this sense, Table 4 shows precisely what we indicated: articles in the WoS/SSCI part of our dataset. We chose to include those frequently cited articles that cumulatively represent 50% of the number of citations in each of the subsets of our dataset (CSR and CSP). We therefore want to re-emphasize the apparent incompleteness in the WoS/SSCI database and to examine the problem related to the method we used some more, noting that especially earlier articles are less visible in these databases. We did learn, however, from WoS/SSCI's cited reference search facility that on September 19, 2005, Carroll (1979) received 149 correct citations from articles in the WoS/SSCI database as well as another 6 that are incomplete or incorrect, for instance in providing wrong page numbers.

With the benefit of hindsight, therefore, we should have made use of the cited reference search facility rather than relying on the number of times cited as they appear in the general search facility. Moreover, the aspect of covering relevant other publications, such as books or journals not included in WoS/SSCI or in other article databases, might have been helpfully countered by making use of more intensive methods for mapping a research field (e.g., Hill & Carley, 1999). Had we intended to provide a full bibliography of literature on CSR and CSP, the omission of Carroll's article and other missing diamonds would have been a serious flaw in our method. However, our objective was "to describe how the concepts of CSR and CSP established over time in general management literature by looking for regularities" (de Bakker et al., 2005, p. 285). We conducted a bibliometric rather than a bibliographic study. Yet one might wonder what the use of such studies is if important contributions to a field of research can be overlooked by the methods applied. In the next section, we will discuss this issue.

Bibliometric Analysis: Does Counting Citations Make Sense?

Measures based on bibliometric techniques are increasingly applied to chart research for all sorts of purposes. Bibliometric information on articles can be used, among others, for text analysis of titles and abstracts (e.g., co-word analysis), for the analysis of trends and for patterns in co-authorship and citations. In a publish-or-perish atmosphere, counting citations for instance is getting ever more important (Baumann, 2003). Bibliometric research is stimulated by the improved electronic accessibility of repositories of academic publications through a growing amount of databases. Yet words of caution regarding an overenthusiastic use of these databases at face value are often formulated (Baumann, 2003; Cameron, 2005; Moed, 2002; Weingart, 2005).

As we learn from the example above, there are several problems with the sort of databases that we used, including an incomplete coverage of journals, incomplete or incorrect information (for example regarding author names; journal names; articles titles; volume, issue, and page numbers, to name but a few of the places where error might occur), unsystematic patterns of overlap and complement among different databases, under-representation of non-English literature, and, more practically, incompatible formats between different databases. It is easy to underestimate the degree to which information retrieved from such databases can be incomplete and erroneous in various ways. From an extensive study on the accuracy of such data in several of the Institute of Scientific Information's citation indexes, Moed (2002) suggests that "the overall number of discrepant cited references is about 7% of the number of citations obtained in a simple matching procedure similar to that applied by the ISI in establishing citation links to the Web of Science" (p. 731). We suggest that the incidence of incompleteness and error in how articles are included in such databases is higher for older articles as databases are still working on their back-catalogues.

Moed (2002) also noted that "bibliographic and bibliometric use are two distinct types of use of scientific information, each with its own set of operational and quality criteria. The ISI's information products are primarily developed for bibliographic use" (p. 732). However, he contends, bibliometrics can be helpful in generating citation frequencies (such as Table 4) and general overviews of publications within a certain field (such as our original article). Such overviews can be accurate "if proper data-collection procedures are applied" (p. 732). In bibliometric research on CSR and CSP, such procedures are not readily available and clever combinations of databases might be helpful. Yet articles appear to score differently in different

citation rankings, as is illustrated in Table 1 below. Such differences seem not to be systematic in any way and can thus only be controlled for by using multiple rankings; mixed results in different citation rankings then have to be compared, interpreted, and valued. In our original article, we opted for the WoS/SSCI database and its general search facility as this is one of the most commonly used databases for such purposes. Extending the set of databases used is possible, although results do not necessarily get much clearer then.

An Alternative Table

To check for any differences in using alternative approaches to generate a table on frequently cited articles, we compiled a new, more comprehensive Table 1. To generate this table, we took all the references from Table 4 and updated the number of citations in WoS/SSCI. For WoS/SSCI, we distinguished between the result through the general search and cited-reference search facilities, respectively, to get a feeling for the amount of misspecification in the number of citations based on the general search facility only. We were interested in exploring two more sources to find out whether and how results might differ. We therefore expanded the number of articles with high citation scores in the new table by searching two new sources that were not available at the time of our original research: Google Scholar (http://scholar.google.com) and Scopus (http://www.scopus.com), using search terms derived from the original ones. Some adaptation to the original search terms was necessary, however, as neither Google Scholar nor Scopus seems to allow for the use of wildcards. We searched for *csr*, *csp*, and *corporate social* and used further selection criteria that rendered results comparable to the earlier search protocols. The result, Table 1, is more comprehensive than Table 4, but we do not claim comprehensiveness; it will be possible to find articles that according to the number of citations they received should have been included in the table. For the same reason, we explicitly do not attach a ranking of articles in Table 1.

From this expansion of available datasets, it should be stated first that we did not identify any frequently cited articles that were not already in our dataset, which confirms the comprehensiveness of our dataset. We then proceeded by collecting citation data from each of the sources on each of the articles. The results are presented in Table 1 by alphabetical order of first author name. Some significant differences in the ordering can be observed, even if we disregard the results from Scopus. Regarding the case of the missing diamonds, we must agree that there are frequently cited CSR/CSP articles that do not appear in WoS/SSCI's general search facility, such as Griffin and Mahon (1997) and indeed Carroll (1979). Inversely, we do not observe

Table 1
Citation Data on CSR/CSP Articles From Different Sources

	Web of Science/Social Science Citation Index				
	Times Cited in General Research Facility Collected Online on May 13-14, 2004	Times Cited in General Research Facility Collected Online on September 20, 2005	Times Cited in Reference Search Facility September 20, 2005	Scopus September 20, 2005	Google Scholar September 26, 2005
Abbott & Monsen (1979)	44	47	53	n.a.	45
Agle, Mitchell, & Sonnenfeld (1999)	21	33	33	46	77
Alexander & Buchholz (1978)	45	48	48	n.a.	31
Arlow (1991)	40	43	44	n.a.	19
Aupperle, Carroll, & Hatfield (1985)	96	103	108	n.a.	89
Bowman & Haire (1975)	46	46	56	n.a.	38
Brown & Dacin (1997)	35	60	65	64	88
Burke & Logsdon (1996)	13	18	18	25	40
Carroll (1979)	n.a.	n.a.	155	n.a.	174
Carroll (1991)	n.a.	n.a.	44	n.a.	72
Carroll (1999)	n.a.	n.a.	19	n.a.	64
Clarkson (1995)	72	92	95	n.a.	251
Cochran & Wood (1984)	64	70	75	n.a.	61
Esrock & Leichty (1998)	18	22	22	26	39
Graves & Waddock (1994)	22	30	30	n.a.	39
Greening & Gray (1994)	36	41	43	n.a.	64
Griffin & Mahon (1997)	n.a.	n.a.	50	n.a.	96
Johnson & Greening (1999)	14	21	21	23	32
Jones (1995)*	119	137	140	n.a.	150
Klassen & McLaughlin (1996)*	61	83	87	118	152

(continued)

Table 1 (continued)

	Web of Science/Social Science Citation Index				
	Times Cited in General Research Facility Collected Online on May 13-14, 2004	Times Cited in General Research Facility Collected Online on September 20, 2005	Times Cited in Reference Search Facility September 20, 2005	Scopus September 20, 2005	Google Scholar September 26, 2005
McGuire, Sundgren, & Schneeweis (1988)	91	103	103	n.a.	132
McWilliams & Siegel (2000)	13	19	20	27	39
McWilliams & Siegel (2001)	10	24	25	44	59
Mitchell, Agle, & Wood (1997)*	107	155	258	218	335
Pava & Krausz (1996)	17	18	19	22	43
Roberts (1992)	16	20	20	n.a.	61
Robertson (1993)*	37	38	38	n.a.	35
Sen & Bhattacharya (2001)	13	34	35	30	35
Sethi (1975)	27	31	40	n.a.	31
Spicer (1978)	33	37	54	n.a.	53
Stanwick & Stanwick (1998)	n.a.	19	20	24	28
Sturdivant & Ginter (1977)	34	34	41	n.a.	12
Swanson (1995)	19	28	28	n.a.	52
Turban & Greening (1997)	34	38	38	n.a.	73
Waddock & Graves (1997)	48	70	73	82	119
Wartick & Cochran (1985)	63	73	84	n.a.	86
Weaver, Trevino, & Cochran (1999)	15	22	22	26	32
Wood (1991)	117	137	140	n.a.	215
Wood & Jones (1995)	n.a.	n.a.	32	n.a.	59

* These articles are included in our database because of keywords assigned by Web of Science/Social Science Citation Index (*KeyWords Plus*).

any articles that have few citations according to WoS/SSCI's general search facility but that are attributed high numbers of citations in other data sources. In Table 1, we marked the few articles that entered our database on *Keywords Plus*. We decided to keep them in our table. Although they do not use CSR or CSP terminology in their title or abstract, they do build on earlier studies on CSR or CSP; that is why *Keywords Plus* attributed these keywords to these articles.

Then, if articles are frequently cited, does that mean they are better or have more quality? Not necessarily. They might be cited because the authors are well known. Or articles might become symbols; authors refer to them to indicate that they belong to a certain field, such as the many citations to DiMaggio and Powell (1983) seem to do for neoinstitutional organization theory (Mizruchi & Fein, 1999) or as some of the citations to Mitchell, Agle, and Wood (1997) might do for stakeholder theory. In the broader field of strategic management—of which the CSR/CSP field could be considered as a subdomain—there are recurrent debates on the methodological soundness of findings. Boyd, Gove, and Hitt (2005), for instance, suggest that even in top journals articles, flawed conclusions are drawn. Therefore, it is dangerous and myopic to use citation frequency as the sole indicator of academic quality. We certainly do not want to suggest that we would like to do so or did so in our article.

Concluding Remarks

Listings such as the one in Table 1 (and the old Table 4) are helpful to get a sense of the structure of a field of research by the identification of influential contributions. Still, in the overall objective of our article, this was only one step toward an understanding of the evolution of CSR and CSP research throughout time. Any choice in delimiting the dataset used in such research can be debated. The modest contribution of such studies is to shed light on the current state of affairs in a specific field and to provide an inroad to characterize the dynamics within a field. Researchers need to learn even more how to work with bibliometric tools to benefit from their potential. In this respect, the increased number and availability of databases makes bibliometric studies more difficult, as their domain and reach differ. This poses questions on the validity of studies that are based on a single database. However, the use of multiple databases leads one to question the extent by which the citation data from different sources, such as in Table 1, overlap and complement, and thus how to interpret the findings.

Scholars in science and technology studies and in library studies have acquired a lot of experience with the potentials and pitfalls of such research

(e.g., Cameron, 2005; Liu, 1993) and learning from them seems beneficial if one attempts to understand the structure and development of a particular field. The usefulness of bibliometric techniques in charting the development of a field can be enhanced further by making iterations in data collection from multiple sources and by feedback from key colleagues on the results. Also, various search procedures might be assessed when documents are searchable in different ways (keywords, citations, full text). In such ways, bibliometric studies can provide valuable contributions in the ordering of an increasingly accessible and broad body of knowledge such as that of CSR and CSP, similar to meta-analyses or literature reviews. Through our article and this research note, we hope to contribute to this ordering.

This research note was aimed at explaining our methods in some more detail. We welcome any further comments and questions. Also, we generated a new, and more comprehensive, table of frequently cited articles in the CSR/CSP field. Still, as the differences between our initial searches in May 2004 and the present one in September 2005 already demonstrate, citation frequencies are moving targets. Follow-up and maybe replication studies within a few years time are appropriate to see where the field of CSR/CSP research comes from and where it is going.

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